IEEE 802.11N WIRELESS OUTDOOR CPE

Quick Installation Guide

V2.0 July 2010

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About the Quick Installation Guide

This Quick Installation Guide is intended to guide professional installer to install the IEEE 802.11N WIRELESS OUTDOOR CPE. It covers procedures to assist you in avoiding unforeseen problems.

Conventions

Warning:

This sign indicates a warning or caution that you have to abide.

Note:

This sign indicates an important note that you must pay attention to.

Chapter 1 Introduction

Introduction

The IEEE 802.11N WIRELESS OUTDOOR CPE is a multi-mode last-mile broadband solution for customers like wireless ISP (WISPs) and system integrators. By the nature of complying with the IEEE802.11n standard and featuring high power output, IEEE 802.11N WIRELESS OUTDOOR CPE supports higher bandwidth with longer range for outdoor applications.

IEEE 802.11N WIRELESS OUTDOOR CPE can be used as the access point, the customer premises equipment (CPE), the WDS or the AP Repeater. While being as the access point, it can be deployed outdoors to provide outdoor wireless internet service. In the other way to be as the outdoor CPE, it can receive wireless signal over the last mile, helping WISPs deliver internet service to the new residential and the business customer where wired broadband internet service, such as cable and DSL, can not serve in. In addition, the easy-to-install IEEE 802.11N WIRELESS OUTDOOR CPE covers 2.4GHz bands, which features outstanding throughput performance and a cost-effective design that allows users to have the reliable outdoor equipment at the affordable price.

Chapter 2 Preparation Before Installation

This chapter describes safety precautions and product information you have to know. Please check this chapter before installing the IEEE 802.11N WIRELESS OUTDOOR CPE.

Professional Installation Required

Please seek assistance from a professional installer who is well trained in the RF installation and knowledgeable in the local regulations.

Safety Precautions

To keep you safe and install the hardware properly, please read and follow these safety precautions.

1. If you are installing the IEEE 802.11N WIRELESS OUTDOOR CPE for the first time, for your safety as well as others', please seek assistance from a professional installer who has received safety training on the hazards involved.
2. Keep safety as well as performance in mind when selecting your installation site, especially where there are electric power and phone lines.
3. When installing the IEEE 802.11N WIRELESS OUTDOOR CPE, please note the following things:
   - Do not use a metal ladder;
   - Do not work on a wet or windy day;
   - Wear shoes with rubber soles and heels, rubber gloves, long sleeved shirt or jacket.
4. When the system is operational, avoid standing directly in front of it. Strong RF fields are present when the transmitter is on.

Installation Precautions

To keep the IEEE 802.11N WIRELESS OUTDOOR CPE well while you are installing it, please read and follow these installation precautions.

1. Users MUST use a proper and well-installed surge arrestor with the IEEE 802.11N WIRELESS OUTDOOR CPE; otherwise, a random lightening could easily cause fatal damage to IEEE 802.11N WIRELESS OUTDOOR CPE. **EMD (Lightning) DAMAGE IS NOT COVERED UNDER WARRNTY.**
2. Users MUST use the “Power cord & PoE Injector” shipped in the box with the IEEE 802.11N WIRELESS OUTDOOR CPE. Use of other options will cause damage to the IEEE 802.11N WIRELESS OUTDOOR CPE.
3. Users MUST power off the IEEE 802.11N WIRELESS OUTDOOR CPE first before connecting the external antenna to it. Do not switch from built-in antenna to the external antenna from WEB management without physically attaching the external antenna onto the IEEE 802.11N WIRELESS OUTDOOR CPE; otherwise, damage might be caused to the IEEE 802.11N WIRELESS OUTDOOR CPE itself.

Product Package

The product package you have received should contain the following items. If any of them are not included or damaged, please contact your local vendor for support.

IEEE 802.11N WIRELESS OUTDOOR CPE	×1
Pole Mounting Ring	×1
Power cord & PoE Injector	×1
Quick Installation Guide	×1
Product CD	×1

Note:

Product CD contains Quick Installation Guide and User Manual!

- Pole Mounting Ring

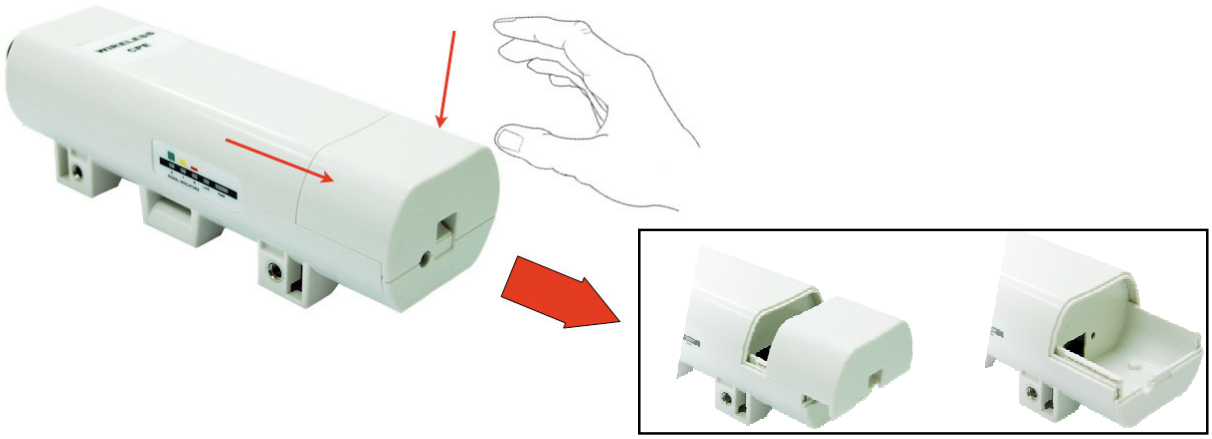
- Power cord & PoE Injector

Warning:

Users MUST use the “Power cord & PoE Injector” shipped in the box with the IEEE 802.11N WIRELESS OUTDOOR CPE. Use of other options will cause damage to the IEEE 802.11N WIRELESS OUTDOOR CPE.

Chapter 3 System Installation

1. The bottom of the IEEE 802.11N WIRELESS OUTDOOR CPE is the movable cover. Grab the cover and pull it back harder to take it out as the figure shown below.

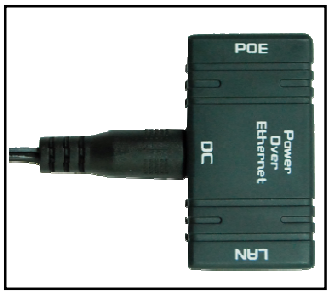


2. Plug a standard Ethernet cable into the RJ45 port.

3.

Slide the cover back to seal the bottom of the IEEE 802.11N WIRELESS OUTDOOR CPE.

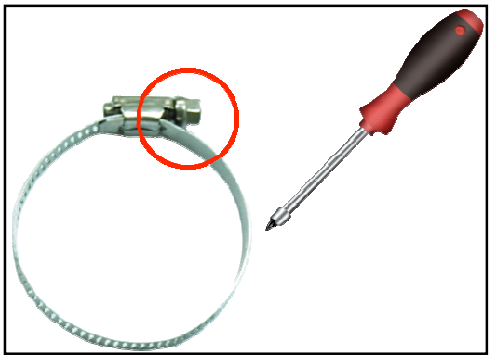
4. Take out the power cord and PoE injector, and plug the power cord into the DC port of the PoE injector as the bottom right picture shows.



5. Put what in the Step.3 and Step.4 together by plugging the other side of the Ethernet cable in the Step.3 into the PoE port of the PoE injector in the Step.4. When you finish the Step.5, the complete set will be like the following picture.

6. Turn the IEEE 802.11N WIRELESS OUTDOOR CPE over. Put the pole mounting ring through the middle hole of the IEEE 802.11N WIRELESS OUTDOOR CPE.

   Note: Unlock the pole mounting ring by a screw driver before putting it through the IEEE 802.11N WIRELESS OUTDOOR CPE as the bottom right picture shows.



7. Mount the IEEE 802.11N WIRELESS OUTDOOR CPE steadily to the pole by locking the

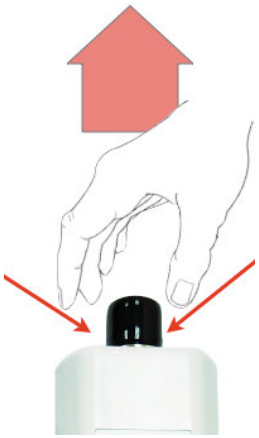
pole mounting ring tightly.

8. Successful installation.

Using the external antenna

If you prefer to use the external antenna with N-type connector for your application instead of the built-in directional antenna, please follow the steps below.

1. Grab the black rubber on the top of the IEEE 802.11N WIRELESS OUTDOOR CPE, and slightly pull it up as the figure shown below. The metal N-type connector will appear.



2. Connect your antenna with the N-type connector on the top of the IEEE 802.11N WIRELESS OUTDOOR CPE.

Note:

- Before using the external antenna with the N-type connector to the IEEE 802.11N WIRELESS OUTDOOR CPE, users should prepare the cable in advance, if needed.
- While connecting the N-type connectors, users should pay attention to the forces they use in prevention of the damage for N-type connectors.

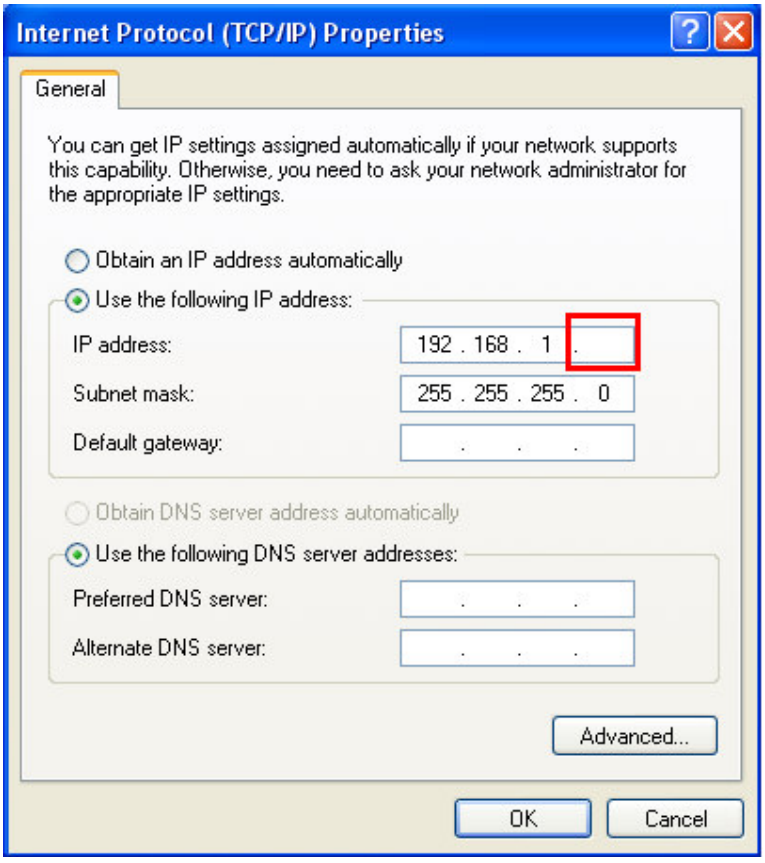
Warning:

- Users MUST power off the IEEE 802.11N WIRELESS OUTDOOR CPE first before connecting the external antenna to it. Do not switch from built-in antenna to the external antenna from WEB management without physically attaching the external antenna onto the IEEE 802.11N WIRELESS OUTDOOR CPE; otherwise, damage might be caused to the IEEE 802.11N WIRELESS OUTDOOR CPE itself.

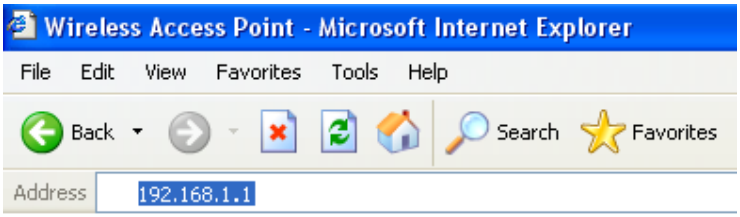
Chapter 4 Configuration

Connect the IEEE 802.11N WIRELESS OUTDOOR CPE with your PC by an Ethernet cable plugging in LAN port of PoE injector in one side and in LAN port of PC in the other side. Power on the IEEE 802.11N WIRELESS OUTDOOR CPE by PoE from PoE injector.

1. Assign a static IP address to your PC which should be in the same network segment with the IEEE 802.11N WIRELESS OUTDOOR CPE. As the default IP address of the IEEE 802.11N WIRELESS OUTDOOR CPE is 192.168.1.1, you may choose from 192.168.1.2 to 192.168.1.254. Then click **OK**.


Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
192 . 168 . 1 .
Subnet mask:
255 . 255 . 255 . 0
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

2. Open the web browser on your PC, key in the IP address (192.168.1.1) of the IEEE 802.11N WIRELESS OUTDOOR CPE in the address bar, and then enter.



3. Now, you will see the log-in page of the IEEE 802.11N WIRELESS OUTDOOR CPE. The default “Name” and “Password” are “**admin**” and “**password**” respectively. Enter them and then click **Login**.

* Since the IEEE 802.11N WIRELESS OUTDOOR CPE covers “AP mode”, “Wireless Client mode”, “Bridge mode” as well as “AP Repeater mode”, the following steps are categorized for convenience reading to describe how to set each mode after successful log-in.

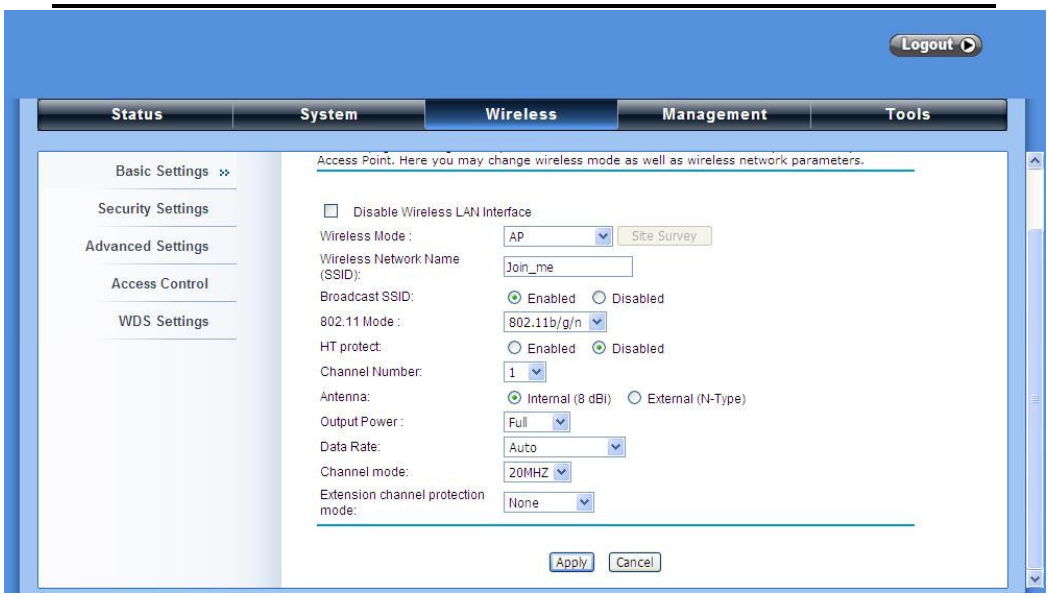
AP Mode

1. Choose **Wireless > Basic Settings**. Then you will see the “Wireless Basic Settings” page. The default is AP mode already. Here, you can set the parameters to optimize your application, or you can leave them as the default. Click **Apply** to save the parameters.

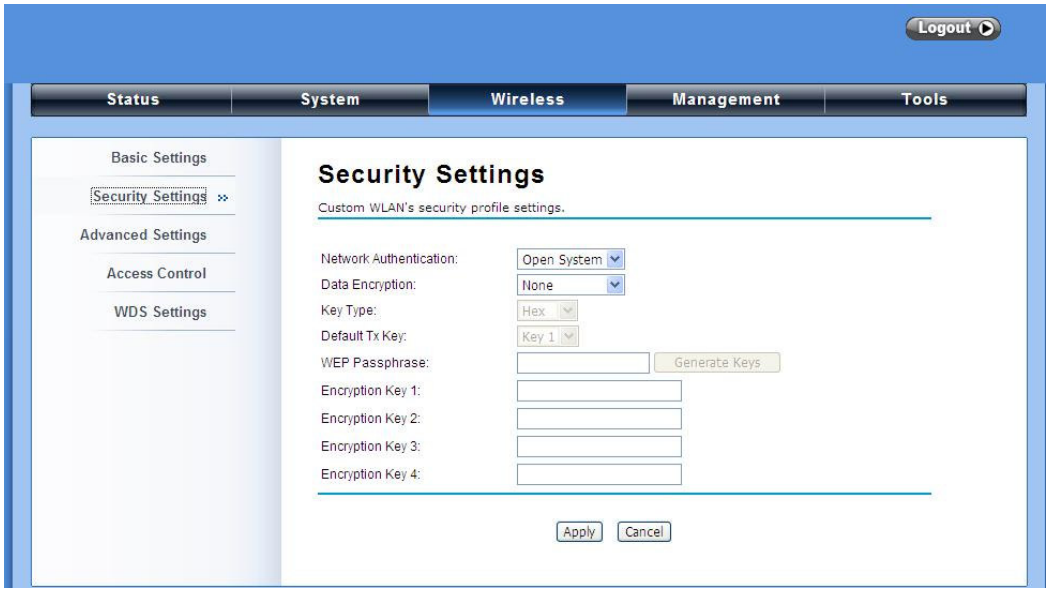
Note:

- In the example here, we only change the “Wireless Network Name (SSID)” as “Join_me”, and later, we will show you if AP mode works correctly. In addition, for better coverage of the AP, you may also use an external antenna; if so, remember to set the antenna setting from “Internal (8 dBi)” to “External (N-Type)” after your external antenna is successfully installed.

- To be reminded that you are able to choose “External (N-Type)” only when you have well done installing the external antenna; otherwise, it might hurt IEEE 802.11N WIRELESS OUTDOOR CPE itself.

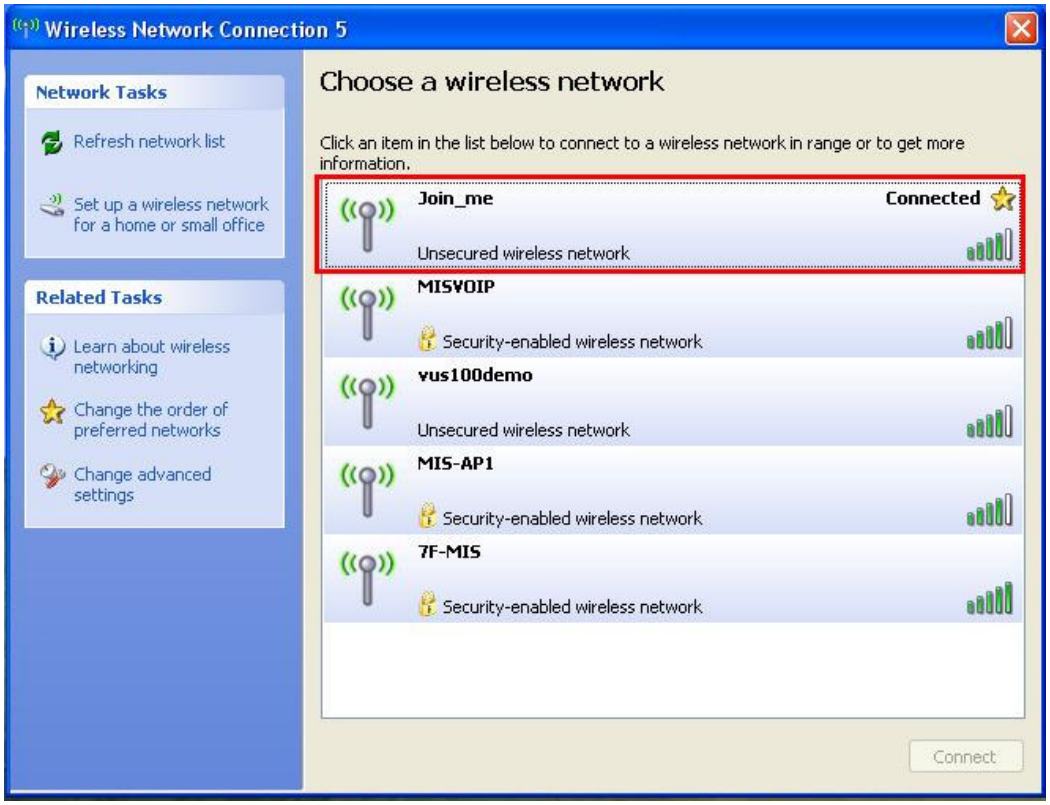


4. Choose **Security Settings** in the left column, and here comes the “Security Settings” page. You may set the parameters like “Authentication” and “Encryption” for more secure network communication in your application. Click **Apply** to save the parameters.



The following screenshot shows the available access points in the wireless network from

another PC aside. Now, you can see “Join_me” in the list.

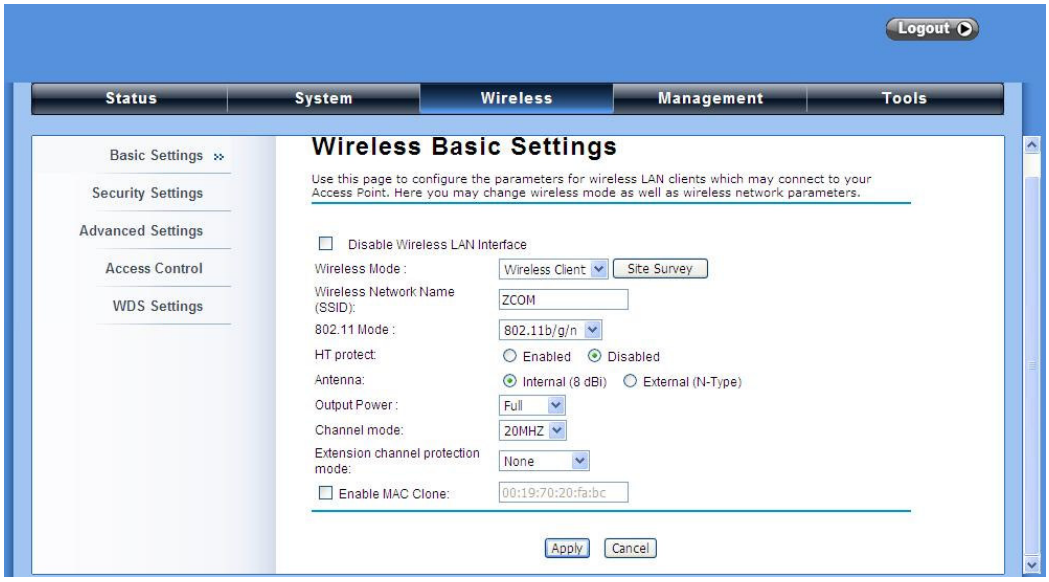


CPE Mode

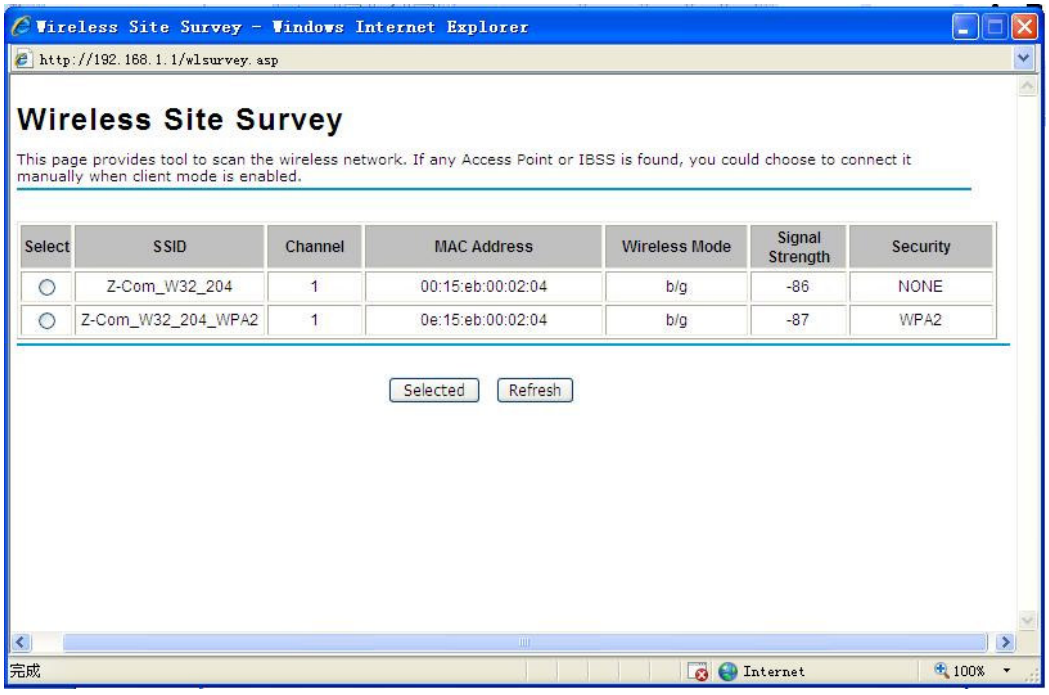
1. Choose **Wireless > Basic Settings**. Then you will see the “Wireless Basic Settings” page. Choose “**Wireless Client**” from Wireless Mode, and click **Apply** to save it. Feel free to change the other parameters to optimize your application before clicking **Apply**.

Note:

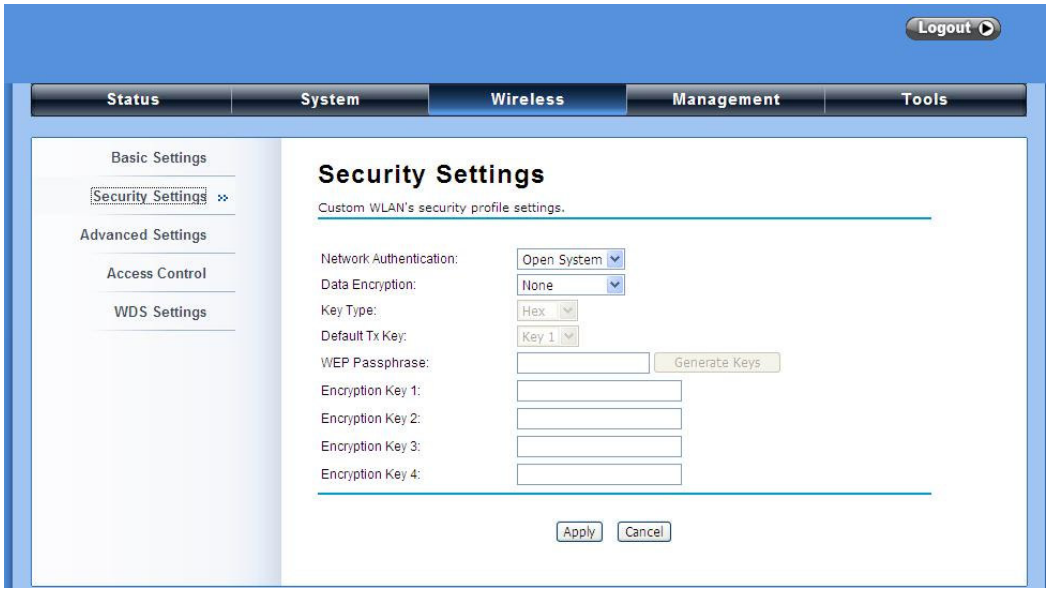
- For longer transmission of the CPE, you may also use an external antenna; if so, remember to set the antenna setting from “Internal (8 dBi)” to “External (N-Type)” after your external antenna is successfully installed, otherwise **do not** set to ““External (N-Type)” without external antenna, in case IEEE 802.11N WIRELESS OUTDOOR CPE has damage..



2. Click **Site Survey**, and a “Wireless Site Survey” window will pop up. The window lists all the available access points / routers in the wireless network. Select the one you prefer to connect to, and click **Selected** to build the connection.



3. If the AP you connect to needs authentication or password, click **Security Settings** in the left column, fill out the corresponding items, and click **Apply** to build the connection; otherwise, the connection is already built.

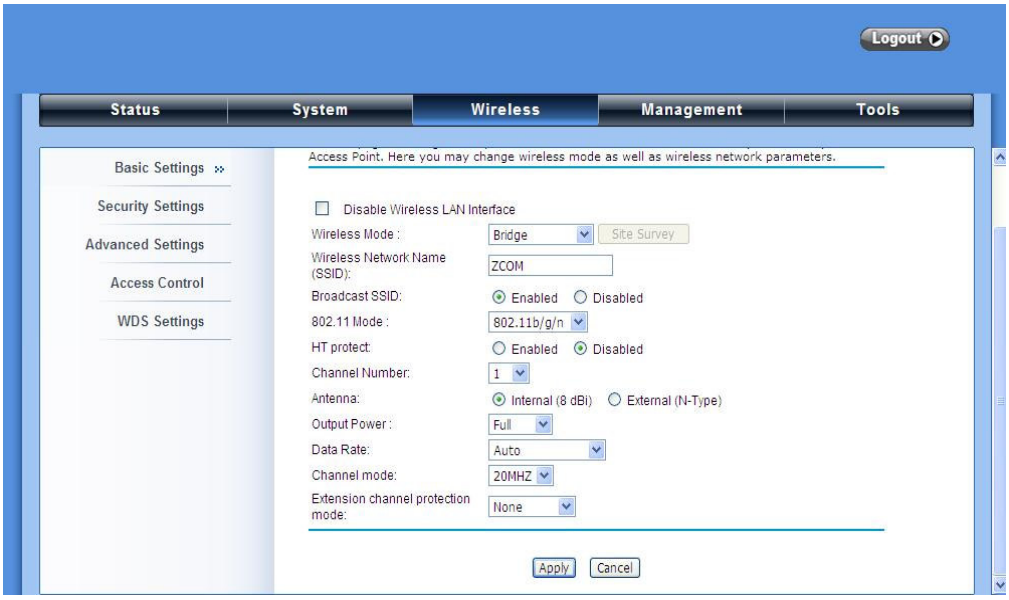


WDS Mode

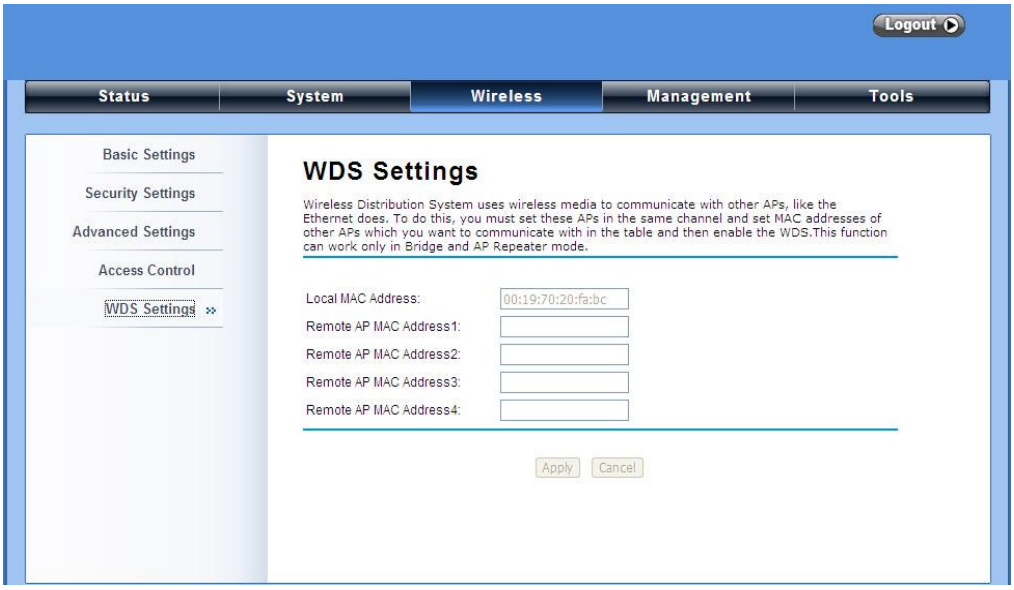
1. Choose **Wireless > Basic Settings**. Then you will see the "Wireless Basic Settings" page. Choose "Bridge" from Wireless Mode, and click **Apply** to save it. Feel free to change the other parameters to optimize your application before clicking **Apply**.

Note:

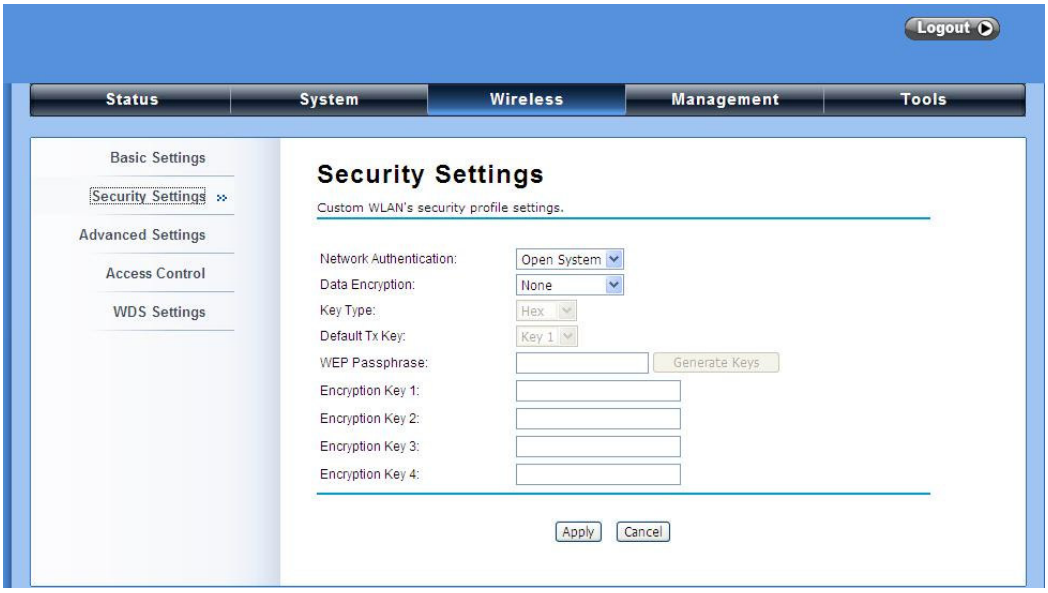
- For longer transmission of the Bridge, you may also use an external antenna; if so, remember to set the antenna setting from "Internal (8 dBi)" to "External (N-Type)" after your external antenna is successfully installed, otherwise **do not** set to ""External (N-Type)" without external antenna, in case IEEE 802.11N WIRELESS OUTDOOR CPE has damage...



2. After enabling WDS mode, users must input the MAC address of another AP you wirelessly want to connect to into the appropriate field in "**WDS Settings**" page. Hit "**Apply**" to save the settings.


Logout
Status
System
Wireless
Management
Tools
Basic Settings
Security Settings
Advanced Settings
Access Control
WDS Settings
WDS Settings
Wireless Distribution System uses wireless media to communicate with other APs, like the Ethernet does. To do this, you must set these APs in the same channel and set MAC addresses of other APs which you want to communicate with in the table and then enable the WDS.This function can work only in Bridge and AP Repeater mode.
Local MAC Address:
00:19:70:20:fa:bc
Remote AP MAC Address1:
Remote AP MAC Address2:
Remote AP MAC Address3:
Remote AP MAC Address4:
Apply
Cancel

3. If the AP you connect to needs authentication or password, click **Security Settings** in the left column, fill out the corresponding items, and click **Apply** to build the connection.

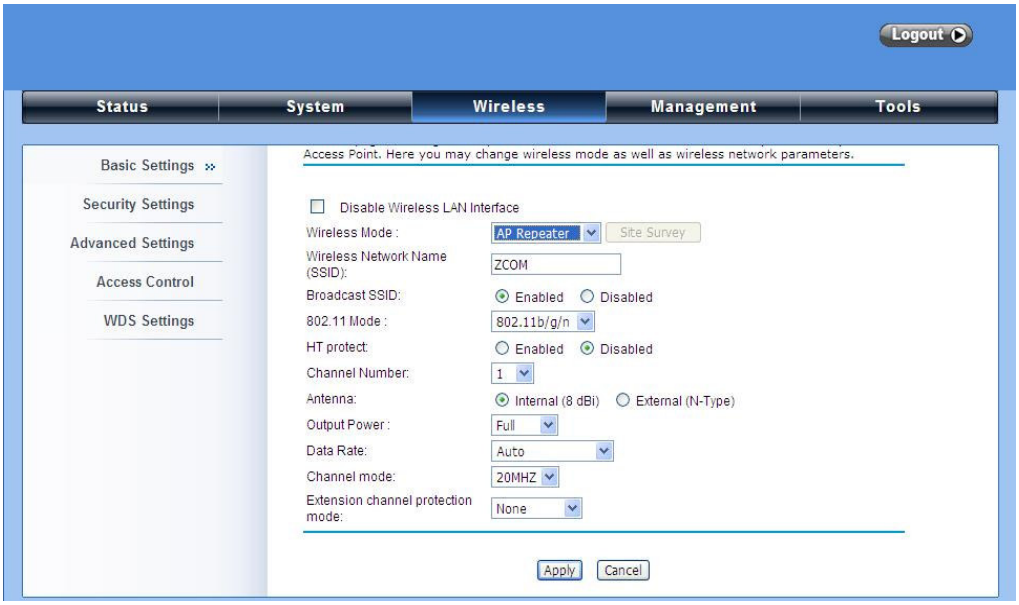


AP Repeater Mode

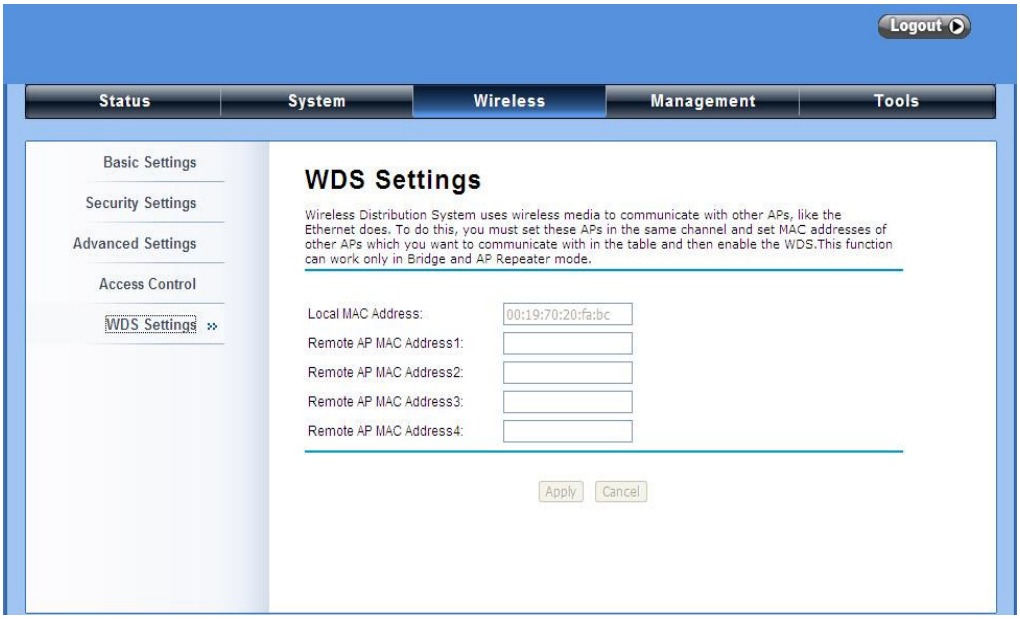
1. Choose **Wireless > Basic Settings**. Then you will see the "Wireless Basic Settings" page. Choose "AP Repeater" from Wireless Mode, and click **Apply** to save it. Feel free to change the other parameters to optimize your application before clicking **Apply**.

Note:

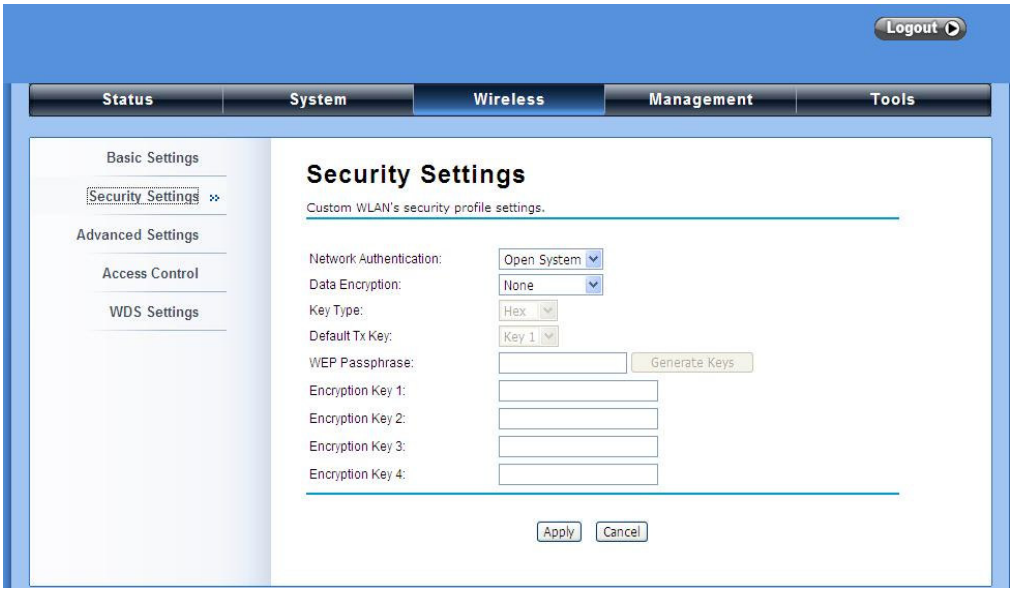
- For longer transmission of the IEEE 802.11N WIRELESS OUTDOOR CPE, you may also use an external antenna; if so, remember to set the antenna setting from "Internal (8 dBi)" to "External (N-Type)" after your external antenna is successfully installed, otherwise **do not** set to ""External (N-Type)" without external antenna, in case IEEE 802.11N WIRELESS OUTDOOR CPE has damage....



2. After enabling AP Repeater mode, users must input the MAC address of another AP you wirelessly want to connect into the appropriate field in "**WDS Settings**" page. Hit "**Apply**" to save the settings.


Logout
Status
System
Wireless
Management
Tools
Basic Settings
Security Settings
Advanced Settings
Access Control
WDS Settings
WDS Settings
Wireless Distribution System uses wireless media to communicate with other APs, like the Ethernet does. To do this, you must set these APs in the same channel and set MAC addresses of other APs which you want to communicate with in the table and then enable the WDS.This function can work only in Bridge and AP Repeater mode.
Local MAC Address:
00:19:70:20:fa:bc
Remote AP MAC Address1:
Remote AP MAC Address2:
Remote AP MAC Address3:
Remote AP MAC Address4:
Apply
Cancel

3. If the wireless device you connect to needs authentication or password, click **Security Settings** in the left column, fill out the corresponding items, and click **Apply** to build the connection.



There are two network modes available in IEEE 802.11N WIRELESS OUTDOOR CPE: Bridge Mode and Router Mode. Users are recommended to pay attention to the following warnings when they configure the network mode.

Warning:

- In AP mode, IEEE 802.11N WIRELESS OUTDOOR CPE must establish connection with another wireless device before it is set to Router mode. In Router mode, it is impossible for users to access device via wired port, for WAN is on wired port and LAN is on wireless port. Users can access device through the wireless device connected to IEEE 802.11N WIRELESS OUTDOOR CPE.
- In CPE mode, users can access IEEE 802.11N WIRELESS OUTDOOR CPE via its wired port, for WAN is on wireless port and LAN is on wired port when device is set to Router mode.
- WDS mode and AP Repeater mode are similar to AP mode when device is set to Router mode; WAN is on wired port and LAN is on wireless port. Thus users must also connect IEEE 802.11N WIRELESS OUTDOOR CPE with another wireless device before it is set to Router mode and access IEEE 802.11N WIRELESS OUTDOOR CPE via the connected wireless device.

Chapter 5 Troubleshooting

1. Why can't I go to the log-in page, while I key in 192.168.1.1 in the address bar of the web browser?

A: Make sure that the IEEE 802.11N WIRELESS OUTDOOR CPE is correctly connected with you PC, and powered on already. Then make sure that the IP address of your PC is set in the same network segment with the IEEE 802.11N WIRELESS OUTDOOR CPE, which means that the IP address of your PC should be between 192.168.1.2 and 192.168.1.254.

2. In the CPE mode, the quality of the connection is bad or unstable after choosing an available access point to connect to. How can I solve it?

A: Since the IEEE 802.11N WIRELESS OUTDOOR CPE comes with the built-in directional antenna, you should turn the IEEE 802.11N WIRELESS OUTDOOR CPE to face the direction where the access point you connect to is located to get the best quality of the connection. In addition, you can also click **Site Survey** in the "Wireless Basic Settings" window to see the Signal Strength. If it is weak or unstable (the smaller the number is, the weaker the signal strength is; please note that the signal strength comes with a native sign with the numbers.), please choose another available access point or router for better connection.